International Banking Crises: A Dossier

Mauro F. Guillén
### Frequency of Financial Crises

**Twin crisis** = banking + currency.

**Triple crisis** = banking + currency + sovereign debt.

<table>
<thead>
<tr>
<th>Year</th>
<th>Banking crisis (number)</th>
<th>Currency crisis (number)</th>
<th>Sovereign debt crisis (number)</th>
<th>Twin crisis (number)</th>
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<td>2006</td>
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<tr>
<td>2007</td>
<td>2</td>
<td></td>
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</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>124</strong></td>
<td><strong>208</strong></td>
<td><strong>63</strong></td>
<td><strong>42</strong></td>
<td><strong>10</strong></td>
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## Selected Banking Crises

<table>
<thead>
<tr>
<th>Country</th>
<th>Initial Year</th>
<th>% Nonperforming Loans at Peak</th>
<th>Gross Fiscal Cost (% GDP)</th>
<th>4-Year Output Loss (% GDP)</th>
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</thead>
<tbody>
<tr>
<td>Spain</td>
<td>1977</td>
<td>n.a.</td>
<td>5.6</td>
<td>2.2</td>
</tr>
<tr>
<td>Egypt</td>
<td>1980</td>
<td>n.a.</td>
<td>38.1</td>
<td>n.a.</td>
</tr>
<tr>
<td>Chile</td>
<td>1981</td>
<td>35.6</td>
<td>42.9</td>
<td>92.4</td>
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<tr>
<td>Senegal</td>
<td>1988</td>
<td>50.0</td>
<td>17.0</td>
<td>32.6</td>
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<td>USA</td>
<td>1988</td>
<td>4.1</td>
<td>3.7</td>
<td>4.1</td>
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<td>Sweden</td>
<td>1991</td>
<td>13.0</td>
<td>3.6</td>
<td>0.0</td>
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<td>India</td>
<td>1993</td>
<td>20.0</td>
<td>n.a.</td>
<td>3.1</td>
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<tr>
<td>Brazil</td>
<td>1994</td>
<td>16.0</td>
<td>13.2</td>
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<td>Mexico</td>
<td>1994</td>
<td>18.9</td>
<td>19.3</td>
<td>4.2</td>
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<td>Japan</td>
<td>1997</td>
<td>35.0</td>
<td>24.0</td>
<td>17.6</td>
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<tr>
<td>Korea</td>
<td>1997</td>
<td>35.0</td>
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<td>50.1</td>
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<td>China</td>
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<td>20.0</td>
<td>18.0</td>
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<td>Russia</td>
<td>1998</td>
<td>40.6</td>
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<td>Turkey</td>
<td>2000</td>
<td>27.6</td>
<td>32.0</td>
<td>5.4</td>
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<td>Argentina</td>
<td>2001</td>
<td>20.1</td>
<td>9.6</td>
<td>42.7</td>
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</tbody>
</table>

Sample: \( N = 66 \).

Sources: Bordo et al. (2001), Caprio et al. (2005), Kaminsky and Reinhart (1999), Obstfeld and Taylor (2004), and these authors.

Notes: As with external debt crises, sample size includes all countries, out of a total of sixty six listed in Table 1 that were independent states in the given year. On the right scale, we updated our favorite index of capital mobility, admittedly arbitrary, but a concise summary of complicated forces. The smooth red line shows the judgmental index of the extent of capital mobility given by Obstfeld and Taylor (2003), backcast from 1800 to 1859 using their same design principle.

Sovereign External Debt: 1800-2006
Percent of Countries in Default or Restructuring

Genesis of a Crisis

Scant Regulatory Oversight

Originate-and-Distribute Model

Mortgage Securitization

Mispricing of Risk

Credit Default Swaps

Crisis

Excess Global Liquidity

Rising Real Estate Prices

Low Interest Rates

Deterioration of Underwriting Standards

Drive to Increase Investment Returns

Excessive Financial Leverage

Growing Importance of Finance

Note: Financial services and insurance accounted for 7.8% of U.S. GDP in 2006.
Housing Prices

Real house prices
House price indices deflated by CPI

Sources: Thomson Datastream, FT/Acadametrics
Subprime Defaults

Souring dough
Monthly defaults on subprime loans* as % of outstanding balance

2005  Q4 06  Q1 06  Q1 07  Q2 06  Q2 07  Q3 06  Q3 07

Source: Fitch Ratings  *By date of origination
Mortgage Defaults by Country

Source: Analistas Financieros Internacionales, based on OECD data.
Debt

In hock
US total debt as % of GDP

Sources: Morgan Stanley; Federal Reserve; BEA
Historical Correction

WE WILL BURY YOU!!

KHRUSCHEV

WE WILL BUY YOU!!

HU JIN TAO

SOVIET UNION

RED CHINA
Growth of a Complex Market

The market for financial instruments known as derivatives — contracts intended to hedge against risk whose values are derived from underlying assets — has increased fivefold since 2002. While Alan M. Greenspan was a champion of them and opposed regulating them, others warned of their risk.

Derivatives outstanding
Notional value, or the amount of the underlying asset on which they are based

2008 total
$531.2 trillion

Interest rate swaps and options; currency swaps
$464.7

Credit default swaps
$54.6

Equity derivatives
$11.9

2002 total
$106.0 trillion

Year end

$101.3

$2.5
$2.2

First half

Source: International Swaps and Derivatives Association
Regulatory Balkanization

Office of Thrift Supervision

Federal Deposit Insurance Corporation

Individual States

Federal Reserve

Individual States

Insurance Companies

Department of Labor

Individual States

Thrifts

Industrial Loan Companies

Bank Holding Companies

Individual States

Securities and Exchanges

Securities and Exchange Commission

Individual States

Commercial Banks

Individual States

Credit Unions

Individual States

Commodity Futures Trading Commission

Possible Actions

- Guarantees on deposits: most countries.
- Lowering of reserve requirements.
- Deposit freeze: e.g. Argentina ‘01.
- Bank holiday.
- Liquidity assistance.
- Unloading of bad debt.
- Insurance of bad debt.

Bank intervention & restructuring:
- e.g. Spain ’77, Sweden ‘91, Mexico ‘94, Japan ‘97, Korea ‘97, China ’98, Turkey ‘00.

Bank liquidations:
- e.g. Spain ‘77, Egypt ’80, Chile ’81, Senegal ‘88, USA ‘88, Sweden ‘91, Japan ’97, Korea ’97, Russia ’98, Turkey ‘00.
The Fed offers $400 billion in loans, accepting mortgage-backed securities as collateral.

The Fed guarantees up to $29 billion of Bear Stearns’s assets as part of its sale to JPMorgan Chase.

The Fed increases the size of its loans to banks and allows them to put up less-secure collateral.

The Fed injects $85 billion into the American International Group.

Working with other central banks, the Fed makes $180 billion available in currency swaps.

The Fed says it will start buying unsecured short-term debt from companies.

The federal funds target rate is cut to 1.5 percent.

The Treasury puts Fannie Mae and Freddie Mac into conservatorship and pledges up to $200 billion to back their assets.

The Treasury sells new bills to provide additional funds for Federal Reserve initiatives.

The Treasury temporarily guarantees money market funds against losses up to $50 billion.

President Bush signs the $700 billion economic bailout package.
### Activist Fed

As the financial crisis has unfolded, the Federal Reserve, in addition to making a series of interest rate cuts, has taken on an increasingly activist role in the markets:

**FEDERAL FUNDS TARGET RATE**

1. **SEPT. 10** The Federal Reserve cuts its benchmark target rate to 4.75 percent from 5.25 percent.
2. **OCT. 31** The federal funds target rate is cut to 4.5 percent from 4.75 percent.
3. **NOV. 26** The Federal Reserve makes $8 billion in funds available as loans to the nation's banks.
4. **DEC. 11** The target rate is cut to 4.25 percent from 4.5 percent.
5. **DEC. 12** The Federal Reserve and other central banks unveil a plan to provide at least $850 billion in short-term financing to banks.
6. **JAN. 22** Concerned about growing turmoil in the markets, the Federal Reserve cuts the target rate to 3.5 percent.
7. **JAN. 30** The target rate is cut to 3 percent.
8. **MARCH 7, 11** The Federal Reserve offers $400 billion in loans to big financial institutions, allowing them to pledge hard-to-sell mortgage-backed securities as collateral.
9. **MARCH 16** The Fed guarantees up to $29 billion of Bear Stearns's assets as part of its sale to JPMorgan Chase.

**RATES CUTOFF**

1. **APRIL 30** The target rate is cut to 2 percent.
2. **MAY 2** The Federal Reserve increases the size of its loans to banks and allows them to put up credit card debt, student loans, and car loans as collateral.
3. **JULY 30** The Federal Reserve expands its emergency borrowing program to include Wall Street firms, not just commercial banks.
4. **SEPT. 6** The Federal Reserve assists the Treasury as it puts Freddie Mac into conservatorship.
6. **SEPT. 18** In conjunction with other central banks, the Federal Reserve makes $180 billion available in currency swaps.
7. **OCT. 7** The Fed says it will start buying unsecured short-term debt from companies.
8. **OCT. 8** The federal funds target rate is cut to 1.5 percent.

Source: Bloomberg (rate cuts)
Liquidity Assistance

A window of worry
Borrowing from Federal Reserve, $bn

Primary-dealer credit facility*
Discount window†

Source: Deutsche Bank

*Investment banks †Commercial banks
So Far

- Countrywide [BoA].
- IndyMac [Gov’t].
- Washington Mutual [JPM].
- Wachovia [WF or Citi?].
- Freddie Mac [Gov’t].
- Fannie Mae [Gov’t].
- AIG [Gov’t].
- Bear Stearns [JPM].
- Merrill Lynch [BoA].
- Lehman Brothers.
- Goldman Sachs (*).
- Morgan Stanley (*).
- GE Capital (?).

(*) Turned into bank holding companies.
The Investment Banks

The worst of times
Impact of recent capital-market crises on investment banks

<table>
<thead>
<tr>
<th>Event</th>
<th>Duration*</th>
<th>Severity†</th>
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<tr>
<td>Black Monday (1987)</td>
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<td>Junk bond (1989-90)</td>
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<td>Mexico (1994-95)</td>
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<td>Asia, LTCM, Russia (1997-99)</td>
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<td>Dotcom, Enron (2000-01)</td>
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<tr>
<td>Subprime, liquidity (2007-)</td>
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</table>

*Number of quarters till earnings at pre-crisis levels
†Earnings lost, number of pre-crisis-quarter earnings
‡Forecast

Sources: Morgan Stanley; Oliver Wyman
Vanishing Act  Wall Street is disappearing through mergers and acquisitions — and recent failures.

INVESTMENT BANK | YEAR FOUNDED
--- | ---
Merrill Lynch & Co. | 1914
Goodbody & Co. | 1896
White, Weld & Co. | 1895
Montgomery Securities | 1904
Lehman Brothers | 1850
Kuhn, Loeb & Co. | 1867
Shearson Hammill Hayden, Stone | 1937
Loeb Rhoades & Co. | 1886
Hornblower & Weeks | 1904
Hempill, Noyes & Co. | 1904
E. F. Hutton & Co. | 1904
Salomon Brothers | 1910
Smith Barney | 1937
Morgan Stanley & Co. | 1835
Dean Witter | 1924
Reynolds Securities | 1869
Goldman Sachs | 1869
Rambrecht & Quist | 1968
Bear Stearns | 1923


Merrill Lynch
Agreed to be bought by Bank of America.

Bank of America
Faces the challenge of integrating two new acquisitions: Countrywide and Merrill Lynch.

Lehman Brothers
Filed for bankruptcy.

Citigroup
Continues to grapple with troubled mortgage securities.

Morgan Stanley
Will become a bank holding company subject to increased regulation.

Goldman Sachs
Will also become a bank holding company.

JPMorgan Chase
Has ridden out the crisis with minimal losses and bought Bear Stearns and Washington Mutual.

Credit Suisse
Is attracting hedge fund clients as they flee other banks.

Deutsche Bank
Had $111 billion in write-downs on mortgage securities but is still seen as a safe haven.

UBS
Has accrued $44 billion in write-downs and plans to split its investment banking from its wealth management unit.
The Wall Street Tournament
Financial Times, 16 de septiembre de 2008 – The last gasp of the broker-dealer
Financial Times, 17 de septiembre de 2008
Biggest Write-Downs

Hall of shame
Biggest write-downs since January 2007*, $bn

- Citigroup
- UBS
- Merrill Lynch
- Bank of America
- Royal Bank of Scotland
- Morgan Stanley
- HSBC
- JPMorgan Chase
- Credit Suisse
- IKB

Source: Bloomberg  *To April 28th 2008
European Woes

- Britain: Northern Rock, HBOS, Bradford & Bingley.
- France: Société Générale.
- Switzerland: UBS.
- Germany: IKB Deutsche Industriebank, Hypo Real Estate, the Landesbanks.
- Benelux: Fortis, Dexia.
- Italy: UniCredit.
- Spain: The small savings banks.
- Ireland: Bank of Ireland, Allied Irish Bank, and four others.
- Iceland: Glitnir Bank.
Casualties of the Financial Crisis
A timeline of bailouts, buyouts and takeovers of financial services companies in the U.S. and Europe since the subprime mortgage crisis began.

Figures are assets as last reported and do not include the value of securities that some companies, notably Fannie Mae and Freddie Mac, guaranteed.

<table>
<thead>
<tr>
<th></th>
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<tbody>
<tr>
<td>IKB Deutsche Industriestiftung</td>
<td>Northern Rock</td>
<td>Countrywide Financial</td>
<td>Bear Stearns</td>
<td>Düsseldorf Hypothekenbank</td>
<td>IndyMac Bancorp</td>
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<tr>
<td>$79.0</td>
<td>216.8</td>
<td>172.1</td>
<td>399.0</td>
<td>42.5</td>
<td>32.3 failed</td>
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</table>

ASSETS, IN BILLIONS

SEPTEMBER 2008

- Freddie Mac 870.0
- Fannie Mae 885.9

Market interventions by the Federal Reserve or the European central banks

A DEC. 12 Central banks of the United States, the European Union, Canada and Switzerland announce a plan to provide at least $90 billion in short-term financing to banks.

B DEC. 18 The European Central Bank injects $500 billion into the financial system. The Bank of England auctions off $20 billion in three-month loans.

C MARCH 7 The Federal Reserve offers up to $200 billion in 28-day loans to banks and big financial institutions.

D MARCH 11 The Federal Reserve offers investment banks up to $200 billion in Treasury securities in exchange for mortgage-backed securities.

E MARCH 21 The European Central Bank offers up to $24 billion in loans to help banks shore up balance sheets. The Bank of England offers up to $10 billion in loans.

F SEPT. 18 The Federal Reserve, the European Central Bank, the Bank of England, the Bank of Japan and the central banks in Switzerland and Canada make $180 billion available in currency swaps.

Source: Bloomberg
Resurgent Sun?

• Sumitomo Mitsui Financial Group invested $1 bn in Barclays.
• Mizuho invested $1bn in Merrill Lynch.
• Mitsubishi UFJ is paying:
  – $3.5 bn for 35% of UnionBanCal.
  – $8.4 bn for 20% of Morgan Stanley.
• Nomura has bought the Asian, European, and Middle Eastern divisions of Lehman.
## Sovereign Funds to the Rescue

### Sovereign Wealth Infusions for Banks

<table>
<thead>
<tr>
<th>Company</th>
<th>Investor</th>
<th>% Stake</th>
<th>Investment Value in US$ Millions</th>
<th>Security Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>Citigroup</td>
<td>Abu Dhabi Investment Authority</td>
<td>4.9</td>
<td>$7,500</td>
<td>New Convertible Units</td>
</tr>
<tr>
<td>Citigroup</td>
<td>Government of Singapore Investment Corp.</td>
<td>3.7</td>
<td>6,880</td>
<td>New Convertible Units</td>
</tr>
<tr>
<td>Citigroup</td>
<td>Kuwait Investment Authority</td>
<td>1.6</td>
<td>3,000</td>
<td>New Convertible Units</td>
</tr>
<tr>
<td>Merrill Lynch</td>
<td>Kuwait Investment Authority</td>
<td>3.0</td>
<td>2,000</td>
<td>New Convertible Units</td>
</tr>
<tr>
<td>Merrill Lynch</td>
<td>Korean Investment Corp.</td>
<td>3.0</td>
<td>2,000</td>
<td>New Convertible Units</td>
</tr>
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<td>Merrill Lynch</td>
<td>Temasek Holdings</td>
<td>9.4</td>
<td>4,400</td>
<td>New Common Stock</td>
</tr>
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<td>Morgan Stanley</td>
<td>China Investment Corp.</td>
<td>9.9</td>
<td>5,000</td>
<td>New Convertible Units</td>
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<tr>
<td>Barclays PLC</td>
<td>Temasek Holdings</td>
<td>1.8</td>
<td>2,005</td>
<td>Common Stock</td>
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<tr>
<td>Credit Suisse</td>
<td>Qatar Investment Authority</td>
<td>1.0</td>
<td>603</td>
<td>Common Stock</td>
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<td>UBS</td>
<td>Government of Singapore Investment Corp.</td>
<td>9.8</td>
<td>9,750</td>
<td>New Convertible Units</td>
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<td>UBS</td>
<td>Saudi Arabian Monetary Agency</td>
<td>2.0</td>
<td>1,800</td>
<td>New Convertible Units</td>
</tr>
</tbody>
</table>

**Total Cash Infusions from Sovereign Wealth Funds** $44,938

* Funds purchased convertible units that can be converted into equity at a future date

Source: Sovereign Wealth Fund Institute, Official Press Releases

Barclays PLC    Quatar Investment Authority    7.7    3,483

Source: Sovereign Wealth Fund Institute.
When the end of the world arrives, how will the media report it?

*USA Today*
  WE’RE DEAD.

*National Enquirer*
  O.J. AND NICOLE, TOGETHER AGAIN.

*Wired*
  THE LAST NEW THING.

*Rolling Stone*
  THE GRATEFUL DEAD REUNION TOUR.

*Discover Magazine*
  HOW WILL THE EXTINCTION OF ALL LIFE AS WE KNOW IT AFFECT THE WAY WE VIEW THE COSMOS?

*Inc. Magazine*
  TEN WAYS YOU CAN PROFIT FROM THE APOCALYPSE.

*The Wall Street Journal*
  DOW JONES PLUMMETS AS WORLD ENDS.

*The Economist*
  WORLD EXTINCT, CAPITALISM SURVIVES.